Assignment - 1

Q-1) Answer the Following

1) Define Proper Set
2) If $A = \{2,4,6,8\}, B = \{1,3,4,5,6\}$ then find $B - A$
3) In usual notations, prove that $(A \cap B) \cap C = A \cap (B \cap C)$
4) In usual notations, prove that $A - (B \cap C) = (A - B) \cup (A - C)$
5) In a class of 42 students, each play at least one of the three games Cricket, Hockey, Football. It is found that 14 play Cricket, 20 play Hockey, 24 play Football, 3 play both Cricket and Football, 2 play Hockey and Football. None play all the three games. Find the number of students who play Cricket but not Hockey.
6) If $A = \{x/x^2 - 17x + 60 = 0\}, B = \{x/x^2 - 7x + 12 = 0\}$ then find $(A \cup B) - (A \cap B)$
7) If $U = \{x/x \in N; x \leq 10\}, A = \{x/x \in N; 2 < x < 6\}, B = \{x/x \in N; x^2 < 5x\}$ then verify that $(A \cup B)' = A' \cap B'$
8) If $A = \{1,2,3\}, B = \{2,3,4\}, C = \{1,3,4\}, D = \{2,4,5\}$ then prove that $(A \times B) \cap (C \times D) = (A \cap C) \times (B \cap D)$